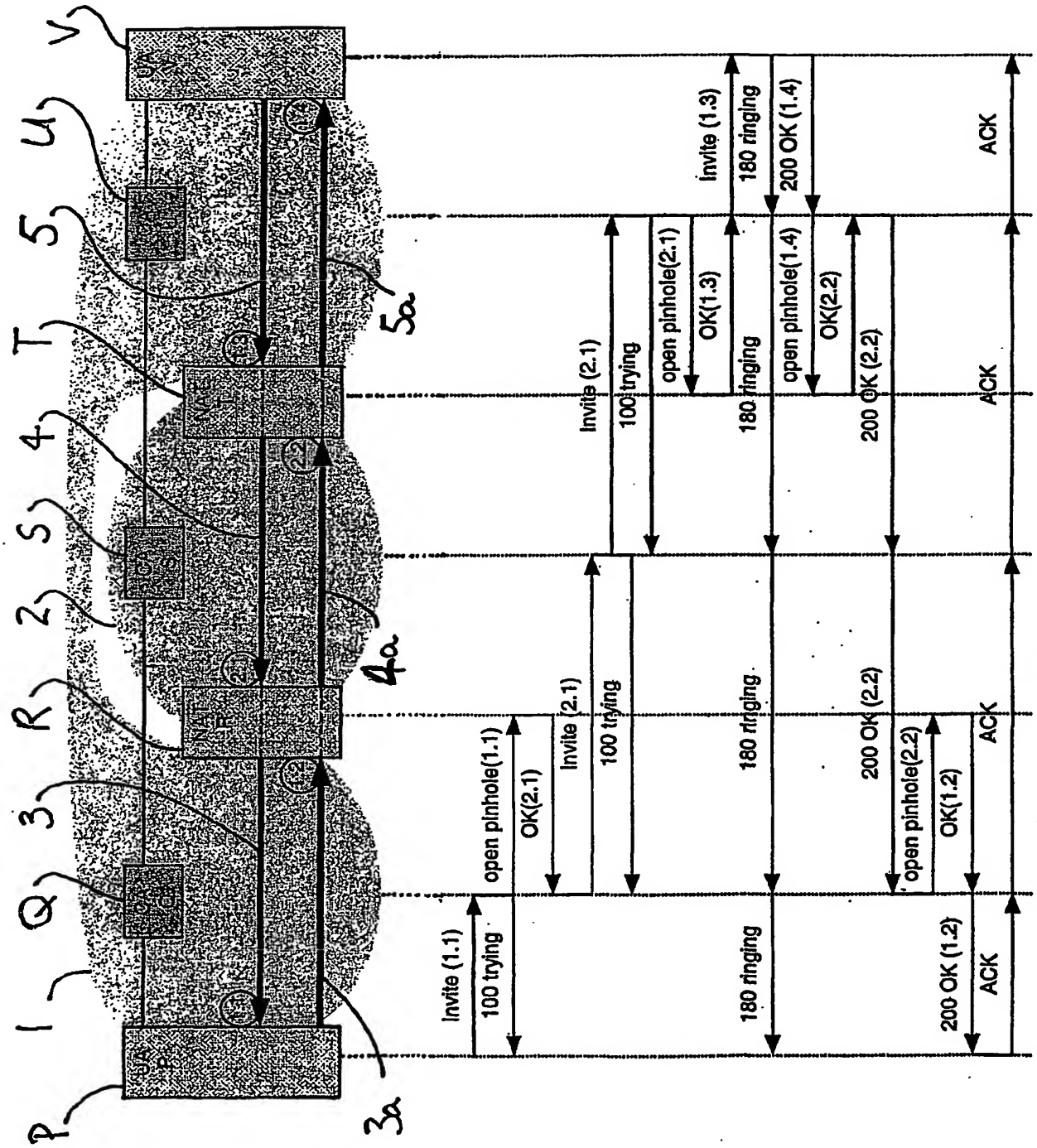
P
1
Q
3
R
2
S
4
T
5
U
V
3a
4a
5a
Invite (1.1)
100 trying
open pinhole(1.1)
OK(2.1)
Invite (2.1)
100 trying
180 ringing
open pinhole(2.1)
OK(1.3)
Invite (1.3)
180 ringing
200 OK (1.4)
ACK
180 ringing
200 OK (2.2)
open pinhole(1.4)
OK(2.2)
200 OK (2.2)
ACK
200 OK (1.2)
open pinhole(2.2)
OK(1.2)
ACK

FIG 1

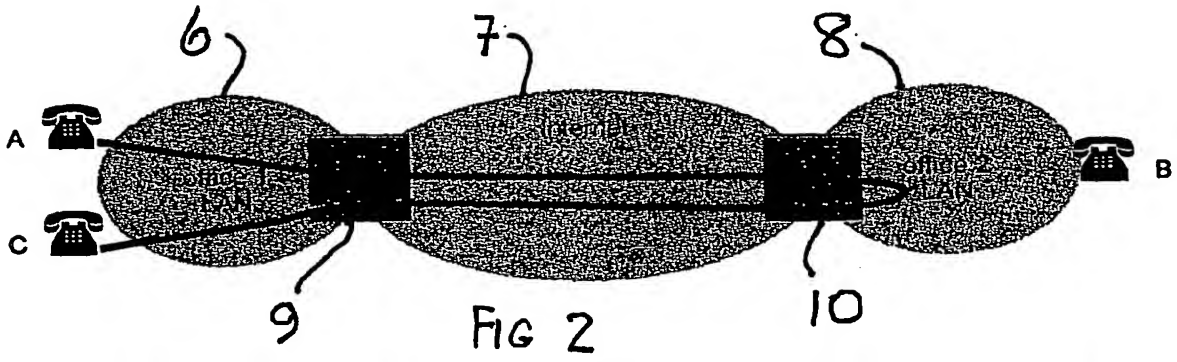

FIG 2

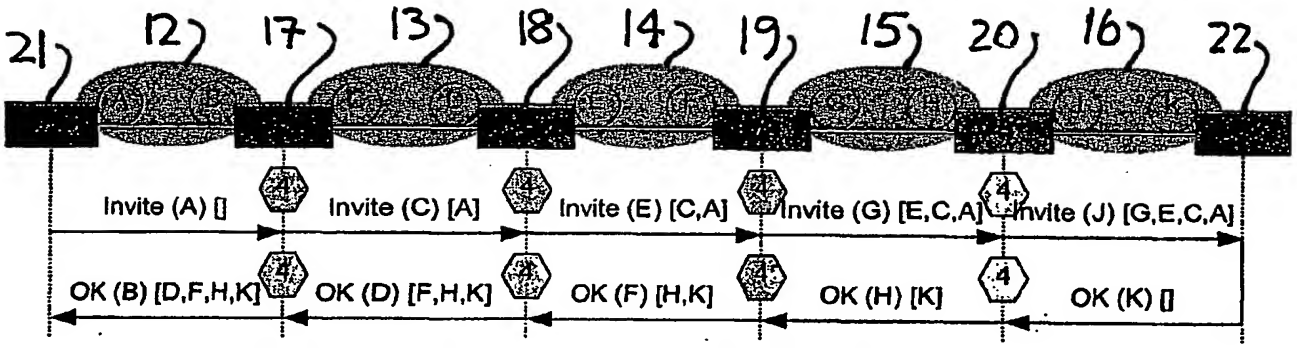

FIG 5

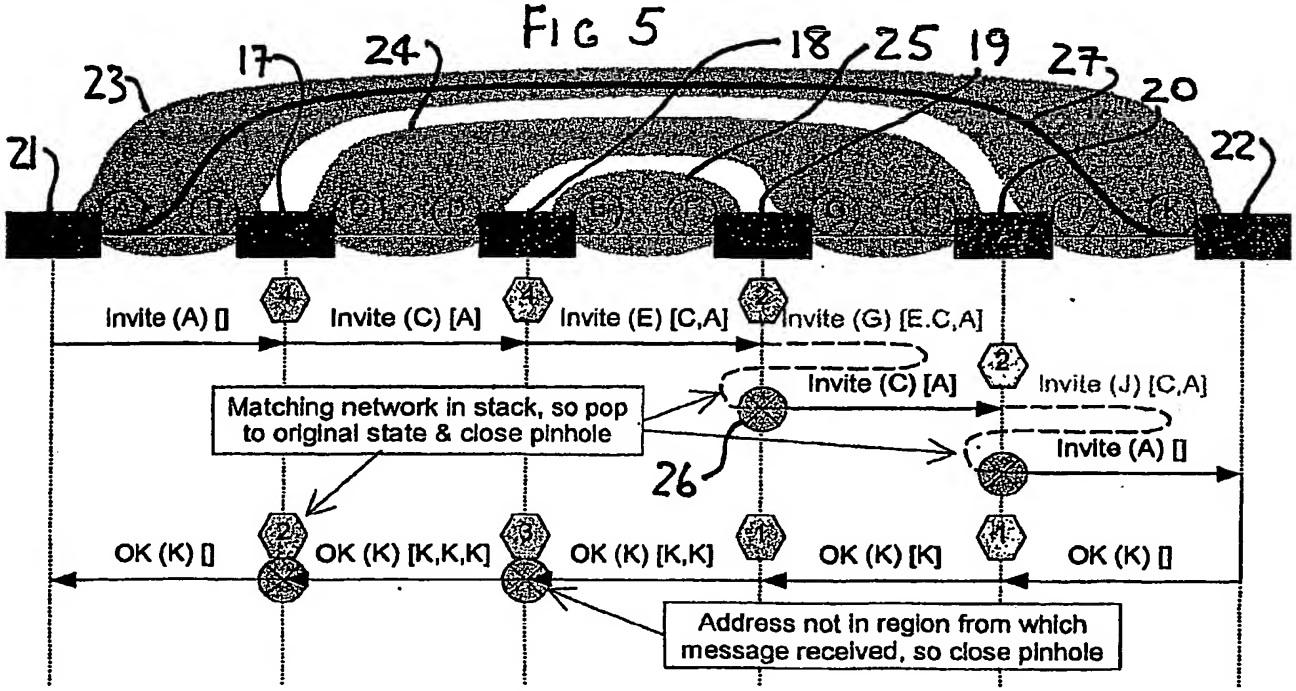

FIG 6

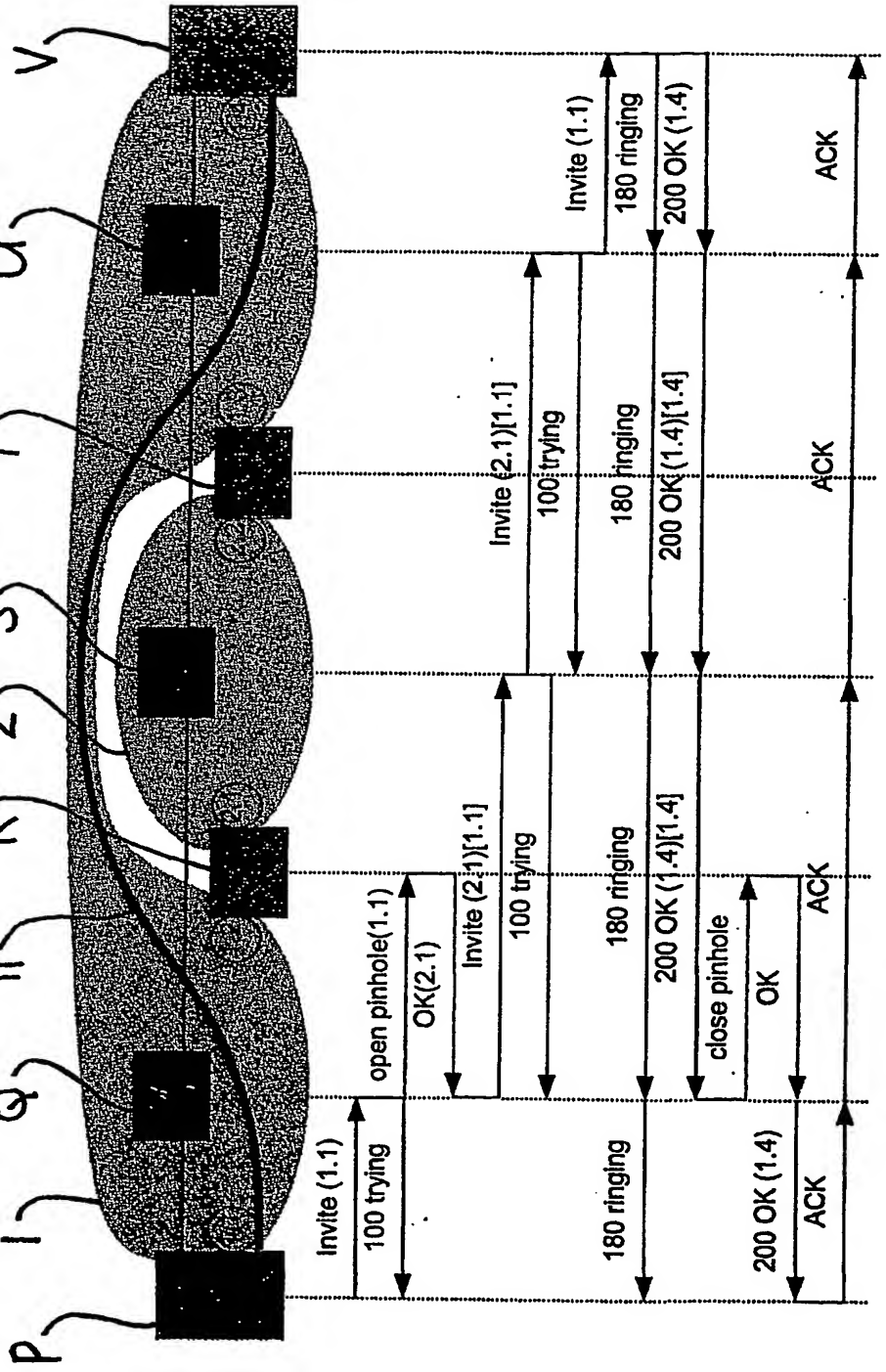
P
I
Q
II
R
2
S
T
U
V
Invite (1.1)
100 trying
open pinhole(1.1)
OK(2.1)
Invite (2.1)[1.1]
100 trying
180 ringing
200 OK (1.4)[1.4]
close pinhole
OK
ACK
180 ringing
200 OK (1.4)
ACK
Invite (2.1)[1.1]
100 trying
180 ringing
200 OK (1.4)[1.4]
ACK
Invite (1.1)
180 ringing
200 OK (1.4)
ACK

FIG 3

Rule No	Processing for session description 'offer' message	
	Condition	Action taken on match
1	-	-
2	Stack contains an entry for the region being entered by the 'offer' message	pop stack until deepest matching entry is new SD close pinhole
3	-	-
4	no other rule applies	push the existing SD to the stack translate the SD to match NAT settings

Rule No	Processing for session description 'answer' message	
	Condition	Action taken on match
1	Pinhole has been closed during 'offer' processing	push duplicate of SD to stack
2	Stack contains an entry for the region being entered by the 'answer' message	pop stack until deepest matching entry is new SD close pinhole
3	Stack has no entry for the region being left by the 'answer' message	push duplicate SD to stack close pinhole
4	no other rule applies	push the existing SD to the stack translate the SD to match NAT settings

FIG 4

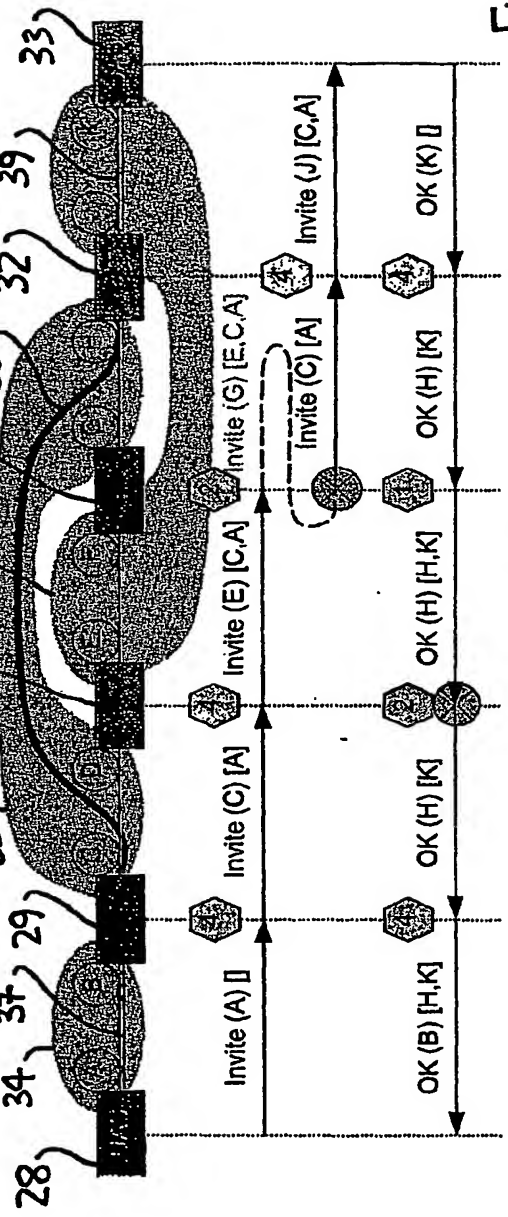
Invite (A) []
Invite (C) [A]
Invite (E) [C,A]
Invite (G) [E,C,A]
Invite (J) [C,A]
Invite (C) [A]
OK (B) [H,K]
OK (H) [K]
OK (H) [H,K]
OK (H) [K]
OK (K) []

Fig 7

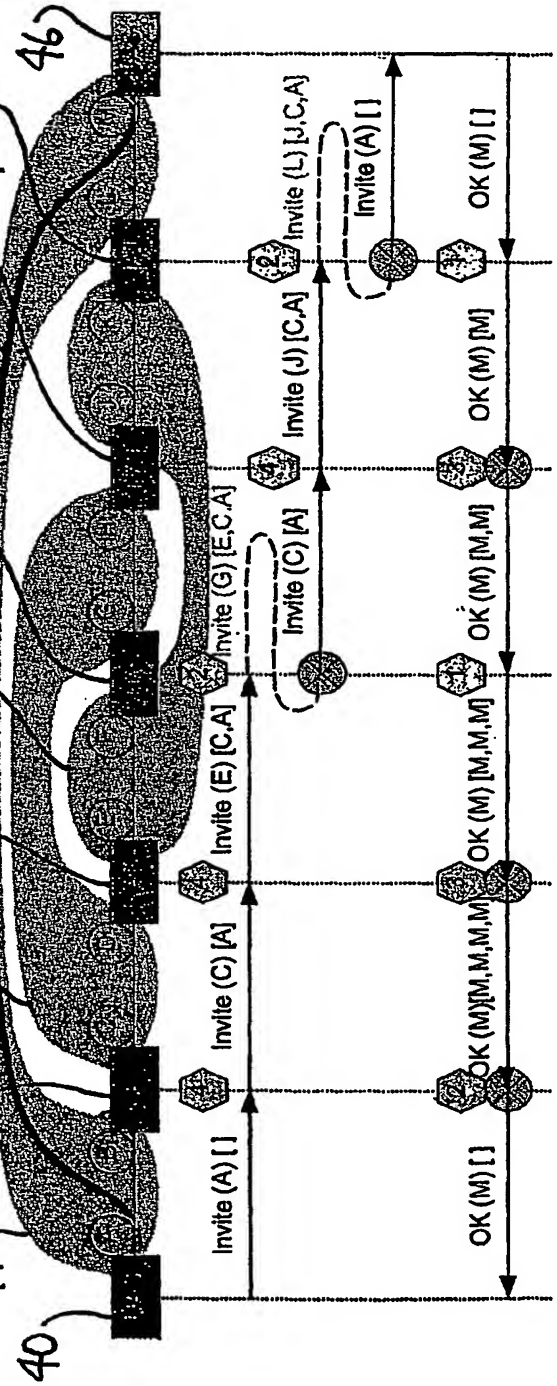
Invite (A) []
Invite (C) [A]
Invite (E) [C,A]
Invite (G) [E,C,A]
Invite (J) [C,A]
Invite (L) [J,C,A]
Invite (C) [A]
Invite (A) []
OK (M) []
OK (M)[M,M,M,M]
OK (M) [M,M,M]
OK (M) [M,M]
OK (M) [M]
OK (M) []

Fig 8

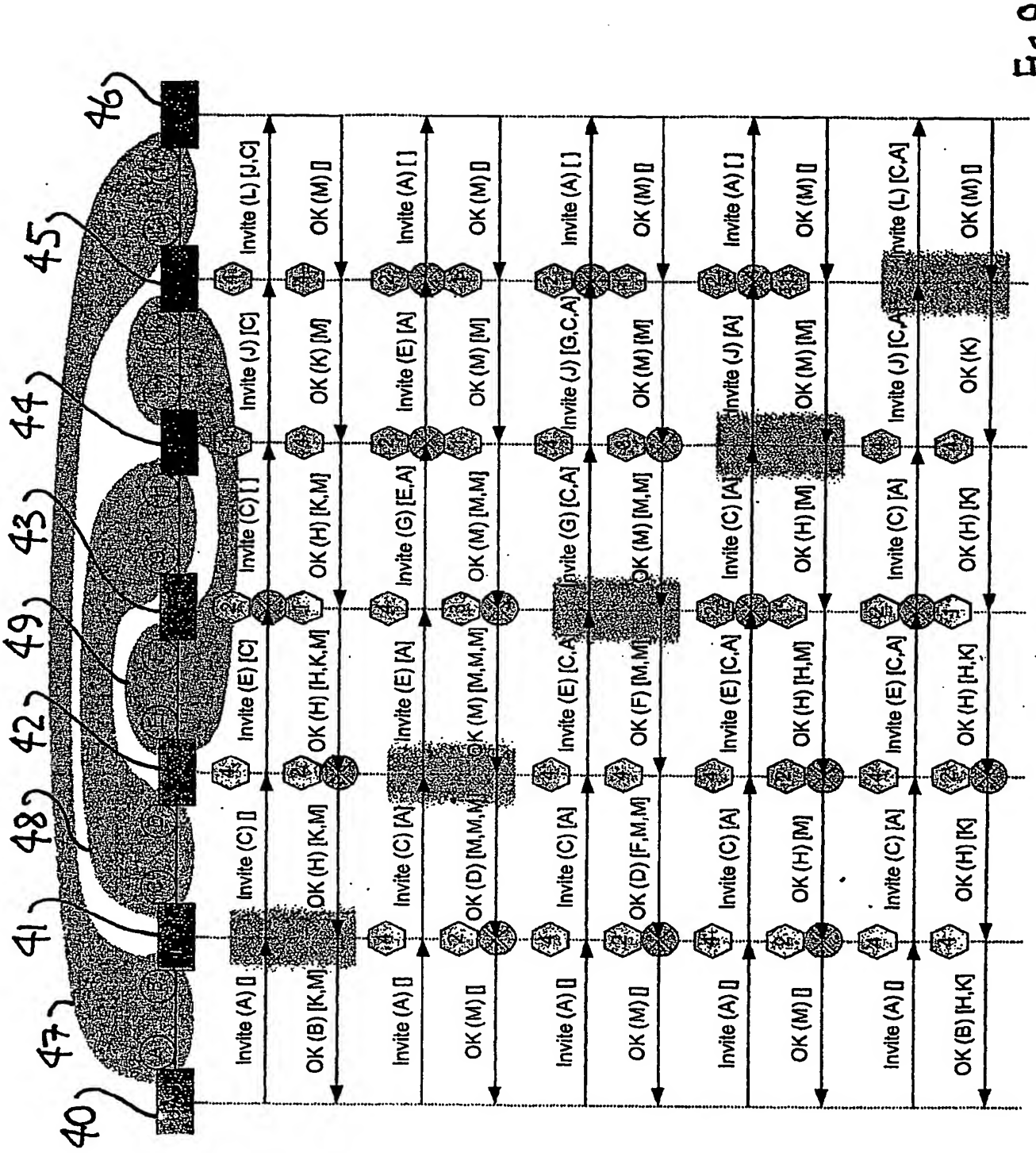
40
41
42
43
44
45
46
47
48
49
Invite (A) []
Invite (C) []
Invite (E) [C]
Invite (J) [C]
Invite (L) [J,C]
OK (B) [K,M]
OK (H) [K,M]
OK (H) [H,K,M]
OK (K) [M]
OK (M) []
Invite (A) []
Invite (C) [A]
Invite (E) [A]
Invite (G) [E,A]
Invite (A) [ ]
OK (M) []
OK (D) [M,M,M]
OK (M) [M,M]
OK (M) [M]
Invite (A) []
Invite (C) [A]
Invite (E) [C,A]
Invite (G) [C,A]
Invite (J) [G,C,A]
Invite (A) [ ]
OK (M) []
OK (D) [F,M,M]
OK (F) [M,M]
OK (M) [M,M]
OK (M) [M]
Invite (A) []
Invite (C) [A]
Invite (E) [C,A]
Invite (C) [A]
Invite (J) [A]
Invite (A) [ ]
OK (M) []
OK (H) [M]
OK (H) [H,M]
OK (M) [M]
OK (M) []
Invite (A) []
Invite (C) [A]
Invite (E) [C,A]
Invite (C) [A]
Invite (J) [C,A]
Invite (L) [C,A]
OK (M) []
OK (B) [H,K]
OK (H) [K]
OK (H) [H,K]
OK (K)

Fig 9